

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on page 6, line 12 as follows:

Under these circumstances, the present inventor has found the following findings. Specifically, by injecting an appropriate amount of the smoke in consideration of the background CO concentration and thereby setting a residual CO concentration in the tuna meat at 1100 to 2400 ~~mg/kg~~ µg/kg, the resulting tuna meat during freezing at about -18°C is prevented from browning for periods of about 2.5 to 3.5 months, which periods are required for distribution, and the tuna meat after thawing exhibits not excessively bright pink but as in the tuna treated with 100% CO gas. The smoked tuna meat after thawing exhibits metmyoglobin-formation to a similar extent and shows a change in color in a similar manner to those of untreated tuna, and the consumers therefore do not misread the freshness of the resulting tuna meat. The above-specified residual CO concentration ranging from 1100 to 2400 ~~mg/kg~~ µg/kg is set with respect to ordinary tuna and must be adjusted in consideration of individual differences (e.g., freshness and quality of flesh) of tuna.

Please amend the paragraph beginning on page 7, line 18 as follows:

To achieve the above objects, the present invention provides a method for preserving tuna by bringing smoke into contact with a fresh tuna meat to be preserved, the smoke being generated by burning a smoking material and containing carbon monoxide gas. This method includes the steps of inserting a plurality of smoke-injection needles disposed in parallel into the tuna meat, ejecting bubbles of the smoke in small portions, inserting or removing the smoke-injection needles into or from the tuna meat while repeating the inserting and ejecting operations at intervals, thereby dispersively injecting the bubbles of the smoke into the tuna meat, thereby allowing a residual carbon monoxide concentration in the tuna meat to range from 1100 to 2400 ~~mg/kg~~ µg/kg (as measured according to Kumazawa's method mentioned

below), and preserving the resulting tuna meat in frozen storage at about -18°C By this configuration, the resulting tuna meat can be preserved in frozen storage in a domestic refrigerator over a long time.

Please amend the paragraph beginning on page 10, line 3 as follows:

In addition, according to the method of the present invention, the residual CO concentration is set at 1100 to 2400 ~~mg/kg~~ μg/kg by injecting a required amount of the smoke containing CO into the tuna meat using injection needles. The residual CO concentration depends on the relationship among the amount of smoke and CO concentration in the bubbles and the residual CO concentration in untreated tuna meat (a background CO concentration). The smoking operation, in which the residual CO concentration is controlled by the use of the smoke injection needles, is very effective for smoking the tuna meat deep inside in a short time without deteriorating the freshness of the tuna meat.

Please amend the paragraph beginning on page 10, line 21 as follows:

The relationship between time and depth of permeation and distribution of the smoke gas into the tuna meat is not given in a simple curve as described above. Almost no other techniques than needle puncher smoke-injection apparatus can significantly allow the CO gas in the smoke precisely and homogeneously coordinate with the tuna meat so that the concentration falls within the range of 1100 to 2400 ~~mg/kg~~ μg/kg in the tuna meat.

Please amend the paragraph beginning on page 18, line 21 as follows:

The amount of the smoke in the bubbles is set so that the ultimate residual CO concentration falls within a range from 1100 to 2400 ~~mg/kg~~ μg/kg depending on the relationship between the CO concentration in the smoke and the background CO concentration of untreated tuna meat. The present inventor has experimentally and empirically verified that the above specified range is such a range that the smoked tuna meat

derived from a fresh tuna meat is prevented from browning for 2.5 to 3.5 months during freezing at about -18°C, and the smoked tuna meat after thawing exhibits metmyoglobin-formation to a similar extent to that of an untreated tuna meat. The amount of CO injected as the smoke can optionally be set by controlling, for example, the CO concentration in the smoke, the pressure, injected amount and injection intervals of the smoke.

Please amend the paragraph beginning on page 26, line 24 as follows:

In consideration of distribution of the tuna meat, the tuna meat must be prevented from browning during freezing at -18°C for at least 2.5 months. To satisfy this requirement, the residual CO concentration in the tuna meat should preferably be equal to or more than 1100 ~~mg/kg~~ μg/kg as mentioned above, and should more preferably be equal to or more than 1500 ~~mg/kg~~ μg/kg. The tuna meat after thawing preferably exhibits a change in color with time to a similar extent to that of untreated tuna meat. To satisfy this requirement, the residual CO concentration in the tuna meat should preferably be less than or equal to 2400 ~~mg/kg~~ μg/kg.

Please amend the paragraph beginning on page 27, line 9 as follows:

It is also known that untreated tuna meat that has been in frozen storage at -60°C and has then been thawed exhibits browning within about 12 days. The above specified residual CO concentration of less than or equal to 2400 ~~mg/kg~~ μg/kg is an upper limit such that the smoked tuna meat exhibits browning within about 12 days as in the untreated tuna meat. The present inventor has also verified this fact practically.

Please amend the paragraph beginning on page 27, line 17 as follows:

(1) The tuna meat during freezing at -18°C must be prevented from browning for at least 2.5 months. To satisfy this requirement, the residual CO concentration has a lower limit of 1100 ~~mg/kg~~ μg/kg.

Please amend the paragraph beginning on page 27, line 20 as follows:

(2) The smoked tuna meat must not exhibit excessively bright color and must exhibit natural color similar to that of untreated raw tuna meat. To satisfy this requirement, the residual CO concentration has an upper limit of 2400 ~~mg/kg~~ µg/kg.

Please amend the paragraph beginning on page 27, line 24 as follows:

(3) The color of the smoked tuna meat after thawing must change with time in a similar manner to that of untreated tuna meat, and thereby the tuna meat must exhibit metmyoglobin-formation and browning within about 12 days. The upper limit of 2400 ~~mg/kg~~ µg/kg in the residual CO concentration in (2) is also required for satisfying this requirement.

Please amend the paragraph beginning on page 34, line 1 as follows:

Unit of figure: [~~mg/kg~~ µg/kg]

D: CO concentration measured by using a detector tube

G: CO concentration measured by gas chromatograph

Please amend the paragraph beginning on page 34, line 4 as follows:

Table 2 shows that the measurements of the three inspection agencies according to the method A vary from the minimum 75 ~~mg/kg~~ µg/kg to the maximum 1100 ~~mg/kg~~ µg/kg and show a large dispersion 14 times or more. The dispersion in the measurements markedly exceeds a range accepted as an analysis method, indicating that the measurement according to the method A clearly has a problematic reproducibility. In contrast, the measurements according to Kumazawa's method vary to a less extent, showing that this method has high reliability.

Page 39 (Abstract), please cancel the original Abstract and insert therefor the attached substitute Abstract as new page 39.